



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW4x58  
UNIQUE ID NUMBER: 1PW056  
COMBUSTOR: Phase 3  
ENGINE TYPE: TF

BYPASS RATIO: 4.8  
PRESSURE RATIO ( $\pi_{00}$ ): 29.5  
RATED THRUST ( $F_{00}$ ) (kN): 258.0

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	8.8	46.6	59.8	11.7
AS % OF ORIGINAL LIMIT	44.8	39.5	60.4	64.2
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			75.5	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			90.4	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			102.7	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			121.1	

### DATA STATUS

- PRE-REGULATION  
x CERTIFICATION  
- REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
x DEDICATED ENGINES TO PRODUCTION STANDARD  
- OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
(ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
x OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
TAKE-OFF	100	0.7	2.482	0.08	0.44	32.51	9.1
CLIMB OUT	85	2.2	1.993	0.09	0.53	25.22	6.3
APPROACH	30	4.0	0.665	0.15	1.82	12.25	0.6
IDLE	7	26.0	0.213	4.29	28.08	3.99	0.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			859	1481	9806	13305	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				5.7	38.0	51.6	9.1
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	102
TEMPERATURE (K)	270
ABS HUMIDITY (kg/kg)	0.0015

### FUEL

SPEC	Jet A
H/C	1.91
AROM (%)	21

MANUFACTURER: Pratt & Whitney  
TEST ORGANIZATION: Pratt & Whitney  
TEST LOCATION: Middletown, CT  
TEST DATES: 15/01/1993-19/01/1993

### NO<sub>x</sub> REGULATION PARAGRAPH

x	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
	2.3.2 e) (CAEP/8)

### REMARKS

1. Data from X693-20 with Phase 3 reduced pressure loss combustor

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)